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cc: Guila F. Mindy P.; C. Merckel (UFW);
P. Carella (DEC).



U.S. DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Administration
National Ocean Service
Office of Response and Restoration
Coastal Protection and Restoration Division
Room 1831
290 Broadway
New York, New York 10007

MEMORANDUM

TO: Paul Ingrisano, ERRD/SPB
FROM: Lisa Rosman, CRC *LR*
SUBJECT: Fort Totten
Summary of NOAA trust habitats and species

DATE: March 2, 1999

NOAA recently submitted comments (2/12/99) on the Fort Totten qualitative Ecological Risk Assessment. In this correspondence, we are providing a summary of NOAA trust habitats and species potentially affected by the release or the threat of a release of hazardous substances from the Fort Totten facility.

Little Bay and Little Neck Bay are located at the northwest end of Long Island near the confluence of the East River estuary and Long Island Sound. The water, sediment and tidal wetlands are habitats of concern to NOAA. The finfish and crab species in Table 1 were compiled from a 10-year (1986-1996) fisheries survey of Little Neck Bay (NMFS 1998). The invertebrates summarized in Table 1 are from Stone et al. (1994). This report lists important species utilizing Long Island Sound and their life history and habitat usage.

Numerous marine and anadromous species are present in Little Neck Bay using waters for spawning, rearing, and adult residence (Table 1). Catch per unit effort calculated from beach seine data indicates that silversides and killifish were the dominant species in the bay, followed by Atlantic herring, striped bass, Atlantic tomcod, bay anchovy, Atlantic menhaden, and winter flounder. Marine species accounted for about half the species collected. Diadromous and estuarine species comprised the remainder.

Marine/Estuarine Species

Small forage species such as silversides, killifishes, gobies, sheepshead minnow, bay anchovy, oyster toadfish, and pipefish are common to abundant in Long Island Sound, spending their entire lives within nearshore embayments and estuaries. Atlantic menhaden and Atlantic herring are also common to abundant forage species that usually spawn in coastal waters, but larvae are transported to estuaries where they reside through adulthood.

Larger demersal species such as winter flounder, windowpane flounder, and skates are common to abundant, spending all or most of their lives in bays and estuaries. Spawning may occur in the estuaries or coastal zone.

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Several cod species including tomcod, red hake, and pollock are present in Long Island Sound, but are not as common as in more northern estuaries. The tomcod can be found throughout lower salinity portions of Long Island Sound, spawning in nearly freshwater and residing in low salinities. Pollock and hake spawn in coastal waters with larval transport to estuaries where they reside as juveniles and adults.

Most of the remaining species exhibit the common marine lifestyle of spawning in coastal areas with larval transport and juvenile rearing in protected bays and estuaries. Adults are present in bays and estuaries seasonally, usually moving offshore during the winter.

Anadromous/Catadromous Species

Many of the East Coast anadromous species are common to abundant in Long Island Sound, using the bays and estuaries for rearing and adult residence, and the streams for spawning. The East River is not a freshwater stream so spawning populations do not occur in the area, but Little Bay and Little Neck Bay are likely used for adult residence. White perch, American shad, alewife, and blueback herring are abundant to highly abundant in Long Island Sound. Adults generally dwell in coastal areas while juveniles are found in embayments and estuaries. Striped bass are common to abundant, particularly the juvenile stages. Juveniles of the catadromous American eel are ubiquitous throughout Long Island rearing and using the area as a migratory corridor before ascending freshwater streams. The Federally protected shortnose sturgeon is common in Long Island Sound.

Invertebrates

The shellfish species spend their entire lives within the bays and estuaries of Long Island Sound. The northern quahog is the most common species in the sound followed by the American oyster. Grass shrimp, bay shrimp and American lobster are common to abundant, spending most or all of their lives within estuaries and bays. Blue crab are common but not as abundant as in estuaries further south on the East Coast. Both juvenile and adult blue crab are present in bays and estuaries while brooding females generally move offshore. Horseshoe crabs were the most abundant of the seven species caught in Little Neck Bay.

References

NMFS 1998. A study of the striped bass in the marine district of New York VII. Anadromous Fish Conservation Act. Completion Report. National Marine Fisheries Service. AFC-20. 115 pp.

Stone, S.L., T.A. Lowery, J.D. Field, C.D. Williams, D.M. Nelson, S.H. Jury, M.E. Monaco, and L. Andreasen. 1994. Distribution and abundance of fishes and invertebrates in Mid-Atlantic estuaries. ELMR Rept. No. 12. NOAA/NOS Strategic Environmental Assessments Division, Silver Spring, MD. 280 pp.

Table 1. Fish and invertebrate species found in Little Neck Bay and Long Island Sound.

Species*		Habitat Use			Abundance**	
Common Name	Scientific Name	Spawning Ground	Nursery Ground	Adult Forage	Total Catch	Catch per Unit Effort
<u>ANADROMOUS/CATADROMOUS SPECIES</u>						
Alewife	<i>Alosa pseudoharengus</i>		◆	◆	1	0.0
American eel	<i>Anguilla rostrata</i>		◆	◆	1	0.0
American shad	<i>Alosa sapidissima</i>		◆	◆	2	0.1
Blueback herring	<i>Alosa aestivalis</i>		◆	◆	16	0.6
Striped bass	<i>Morone saxatilis</i>		◆	◆	238	8.3
White perch	<i>Morone americana</i>		◆	◆	26	0.9
<u>MARINE/ESTUARINE FISH SPECIES</u>						
American sandlance	<i>Ammodytes americanus</i>		◆	◆	2	0.1
Atlantic herring	<i>Clupea harengus</i>		◆	◆	625	21.6
Atlantic menhaden	<i>Brevoortia tyrannus</i>		◆	◆	86	3.0
Atlantic tomcod	<i>Microgadus tomcod</i>	◆	◆	◆	104	3.6
Bay anchovy	<i>Anchoa mitchilli</i>	◆	◆	◆	96	3.3
Bluefish	<i>Pomatomus saltatrix</i>		◆	◆	57	2.0
Gobies	<i>Gobiosoma</i> spp.	◆	◆	◆	1	0.0
Grubby sculpin	<i>Cottidae</i>	◆	◆	◆	3	0.1
Killifish	<i>Fundulus</i> spp.	◆	◆	◆	1474	50.8
Northern pipefish	<i>Syngnathus fuscus</i>	◆	◆	◆	5	0.2
Spotted hake	<i>Urophycis regia</i>		◆	◆	4	0.1
Sheepshead minnow	<i>Cyprinodon variegatus</i>	◆	◆	◆	3	0.1
Silversides	<i>Menidia</i> spp.	◆	◆	◆	5531	190.7
Spot	<i>Leiostomus xanthurus</i>		◆	◆	21	0.7
Summer flounder	<i>Paralichthys dentatus</i>		◆	◆	1	0.0
Tautog	<i>Tautoga onitis</i>		◆	◆	1	0.0
Windowpane flounder	<i>Scophthalmus aquosus</i>	◆	◆	◆	18	0.6
Winter flounder	<i>Pleuronectes americanus</i>	◆	◆	◆	66	2.3
<u>CRAB SPECIES</u>						
Blue crab	<i>Callinectes sapidus</i>		◆	◆	19	0.7
Calico crab	<i>Hepatus epheliticus</i>		◆	◆	97	3.3
Green crab	<i>Carcinus maenas</i>		◆	◆	19	0.7
Horseshoe crab	<i>Atelecyclidae</i>		◆	◆	133	4.6
Mud crab	<i>Xanthidae</i>		◆	◆	1	0.0
Rock crab	<i>Cancer irroratus</i>		◆	◆	4	0.1
Spider crab	<i>Majidae</i>		◆	◆	2	0.1
<u>INVERTEBRATE SPECIES</u>						
American lobster	<i>Homarus americanus</i>	◆	◆	◆	Highly abundant	
Bay shrimp	<i>Crangon septemspinosa</i>	◆	◆	◆	Highly abundant	
Blue crab	<i>Callinectes sapidus</i>		◆	◆	Common	
Blue mussel	<i>Mytilus edulis</i>	◆	◆	◆	Common	
Eastern oyster	<i>Crassostrea virginica</i>	◆	◆	◆	Abundant	
Grass shrimp	<i>Palaemonetes pugio</i>	◆	◆	◆	Abundant	
Northern quahog	<i>Mercenaria mercenaria</i>	◆	◆	◆	Abundant	
Softshell clam	<i>Mya arenaria</i>	◆	◆	◆	Common	

* Fish and Crab species list from NMFS 1998; Invertebrate species list from Stone et al. 1994;.

** Total Catch and Catch per Unit Effort taken from NMFS 1998; Qualitative abundance taken from Stone et al. 1994

Common – Species is frequently encountered but not in large numbers; does not imply a uniform distribution over a specific salinity zone
Abundant – Species is often encountered in substantial numbers relative to other species
Highly Abundant – Species is numerically dominant relative to other species

NOAA welcomes the opportunity to offer technical assistance on this site. Should you have any questions regarding these comments, please feel free to contact me at (212) 637-3259.

cc: Mindy Pensak, DESA/HWSB
Gina Ferreira, ERRD/SPB
Robert Hargrove, DEPP/SPMM
Chuck Merckel, USFWS
Paul Carella, NYSDEC